

REDISCOVERY OF ORCUTTIA FRAGILIS (GRAMINEAE)

John R. Reeder & Charlotte G. Reeder
Herbarium, University of Arizona, Tucson 85721

In early January of 1939, H. S. Gentry, following the old road through the Magdalena Plain in Baja California Sur, crossed the Llanos de Hiray. Here he collected a grass which J. R. Swallen (J. Washington Acad. Sci. 34: 308. 1944) determined to be a species of Orcuttia new to science, naming it O. fragilis. There must have been unusually heavy rains during the previous months, for Gentry's label data are: "An abundant forage grass over the great flood plain following rain storage. Reported excellent for cattle." Apparently no collections of this species have been made since, as no specimens, other than those of the type collection, are to be found in herbaria. Inquiry of those botanists who have worked a great deal in Baja California (e.g. Annetta Carter, Duncan Porter, Reid Moran) elicited the information that none of them has seen the species in the field. It is noteworthy that I. L. Wiggins' new Flora of Baja California (1980) does not list the species as occurring on the peninsula, even though it was included by Shreve & Wiggins (Vegetation and Flora of the Sonoran Desert, 1964). In the latter publication, in which the treatment for the grasses was contributed by Swallen, the type locality is erroneously given as "Llano Datillare."

Orcuttia fragilis is one of eight taxa recognized in the genus. All are annuals, endemic to California and Baja California where they are characteristic of vernal pools. The seeds remain viable for many years, germinating only after their habitats have been flooded. A particular pool may have no Orcuttia for several dry years, but after sufficient rains may support a large population, sometimes an essentially pure stand, as the habitat dries. Except for its relationship to the monotypic California endemic, Neostapfia, Orcuttia appears to have no close relatives. For this reason a special tribe, the Orcuttieae, has been erected to accommodate these two genera (Reeder, J. R., Madroño 18: 18—28. 1965).

With assurances that the moisture conditions on the Peninsula were exceptionally favorable that year, in late December, 1974, we planned a trip to the Llanos de Hiray in an attempt to determine whether or not Orcuttia fragilis still exists in nature, and to learn more about this rare species. We were able to locate the area (even though Gentry had given the locality on his label as "Llano Dirai"), but although the plain was green with vegetation, the only Orcuttia to be seen consisted of dry and weathered clumps, and there were great cracks in the soil. In subsequent visits between the years 1974 and 1978 we found no evidence of this grass. In fact, the entire llano area was dry and parched with little herbaceous vegetation. This led us to wonder whether the extensive development of irrigated agriculture slightly to the north, in the area of Cd. Constitución, had lowered the water table sufficiently



UNIVERSITY OF CALIFORNIA HERBARIUM
 SAN DIEGO CALIFORNIA MEXICO

Orcuttia fragilis Swallen

BAJA CALIFORNIA SUR: Llanos de Miray,
 an extensive open plain which may
 become flooded after infrequent heavy
 rains. Forming a pure stand for a
 distance of 5 miles, this collection
 from the western end. Plants freely
 branching, the resulting slumps as
 much as 50 cm across.

Chromosome no. 1 2n = 40
 Elevation 20 m May 11, 1979
 John B. Reeder 7151
 Charlotte G. Reeder

Orcuttia fragilis Swallen

to render the Llanos an unsuitable habitat for *Orcuttia fragilis*.

During the winter and spring of 1979, it may be recalled, the entire Baja California peninsula was subjected to particularly heavy rainstorms. Those who attempted to travel the new trans-peninsular highway during that period will remember the washed out bridges and generally poor condition of the roadbed. With this information, and the hope that 1979 might be the year for *Orcuttia*, in May we were again at the Llanos de Hiray. This time the aspect was unbelievable. *Orcuttia fragilis* was there, and in abundance. Hundreds of acres were covered with this grass, which was in full flower and forming an essentially pure stand. These llanos are extensive, and *Orcuttia* was abundant throughout the area—a distance of some five miles west to east. We were greatly excited to see this magnificent stand of a plant which for 40 years had been known to botanists only from the type collection. A. C. Smith (J. Arnold Arb. 30: 2. 1949) has expressed one's feelings under such circumstances so well that we can scarcely improve on his statement: "Collectors will agree with me that the rediscovery of a rare plant gives an emotional pleasure incomparably greater than its original discovery, at which time it is unexpected and usually unrecognized." This area is rangeland, and a number of cattle were on the Llanos. Although Gentry had indicated: "Reported excellent for cattle," we noted that none of the plants had been cropped. It appeared that grazing animals avoid *Orcuttia* if there is anything else available.

In September, 1979, there were again heavy rains on the Baja California peninsula. The Llanos de Hiray were flooded even more extensively than they had been during the previous winter and spring. When we visited the area in early June, 1980, we found a lake covering much of the Llanos. The flooding was so extensive that the old road crossing the plain was unusable and in places under water. The *Orcuttia* was again abundant, as it had been the year before, covering the lake margins with an unbroken greensward. In contrast to 1979, however, this time the area was swarming with cattle, and numerous "vacero" camps dotted the Llanos' edge. There seemed little vegetation other than *Orcuttia*, and this time it was evident that the grass was being grazed. The animals were thin, and appeared not to relish the forage, but rather to tolerate it since there was little else.

Orcuttia fragilis is not yet extinct! It flourishes on the Llanos de Hiray, but apparently nowhere else. One of the "rancheros" told us that this area may not be flooded for a period as long as 30 years. Is it possible that our *Orcuttia* has not been abundant here since Gentry found it in 1939? This interesting species will now be better represented in herbaria. We collected numerous specimens which will be distributed to important herbaria in this country and abroad. A revision of the genus *Orcuttia*, based on field work and chromosome counts for all taxa, is in the final stages of completion.